

**INTERACTION DESIGN FOR THE REAL WORLD**  
DOCUMENTATION

Students:  
Allison Cook  
Dominic Berchtold  
Eva-Yola Hajdu

Lecturer:  
Peter Sicking

Inter Media  
IMB 4  
Summer 2013

## **DESIGN GOALS**

### PRODUCT VISION

The three core GIMP values are control, the freedom to create, and speed. The align tool provides users with control by allowing them to work with very high precision. For example, users are able to set the target without mistakes and set precise offset values. The program also gives users the freedom to create by inducing a tight feedback loop while working because they know what they are doing. The operation of the tool itself is not the end goal; instead, users can focus on achieving their creative goals without thinking of their actions. The speed of the GIMP align tool allows users to select objects quickly, carry out align and distribute functions deftly, and get to the final goal in as little steps as possible.

## LIST OF FUNCTIONALITY

- objects which can be aligned/distributed:  
layers, paths, selections, vector shapes
- target object can be the canvas or a layer,  
path, selection, or vector shape
- points in which objects automatically snap to:
  - bottom center
  - top center
  - center left
  - center right
  - corners
- align one or more objects to a target object
- align edge to edge and corner to corner
- distribute one or more objects in infinite  
directions
- distribute a stack of objects from the center  
outwards in both directions
- set an offset
- measurement choices for offset: pixels,  
centimeters, millimeters, inches
- automatic offset when no offset value is set

## **USER SCENARIOS**

1. Users can align one object to another object.
2. Users can keep multiple objects together.
3. Multiple objects can be distributed from a selected object.
4. Keeping everything together.

## EXPERT EVALUATION

The align tool in GIMP does not represent the GIMP values in the ways that the product vision is described. Users do not have direct, user-friendly control because there is almost no interaction with the canvas. Users have little freedom to create because tasks are limited to 6 directions of alignment. The speed of the alignment tool is hindered because there are complicated steps to reach one's goal.

Users can align and distribute objects in a simple action.

The align tool does not function with the speed necessary for users to have a consistent workflow.

There is lack of control in the way that users must interact with the align tool dialog box.

Having the same icons for both align and distribute is confusing for the user.

The "relative to" drop down menu is unclear.

Speed is hindered because users must double-click to select layers.

The way that users must select layers on the canvas and then work from the toolbox is complicated and it takes longer to reach goals.

Sometimes the objects move in the opposite direction of what you clicked.

It takes users too long to reach their goals because there are too many steps.

Cannot align diagonally-must align left and then top.

Distributing objects does not work when they are already at the offset distance-it doesn't rearrange the order.

Users can only distribute by setting an offset value in pixels, which limits control.

There is no indication of the order of one's selection of multiple objects, creating confusion and inhibiting speed.

## BRAINSTORMING

During the brainstorming phase, we sketched any and all ideas about improving the align tool based on our evaluation in GIMP. We organized our ideas into three pre-determined categories: functionality, design in the toolbox, and design outside of the toolbox.

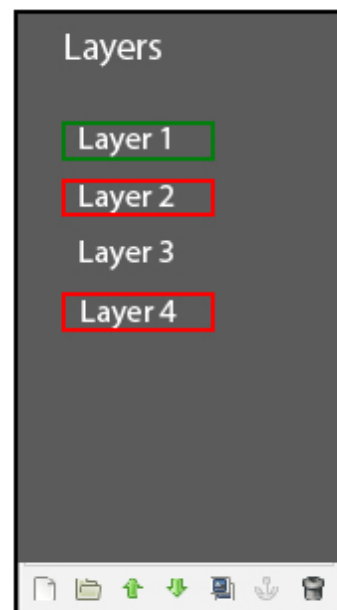


## DESIGN SOLUTION

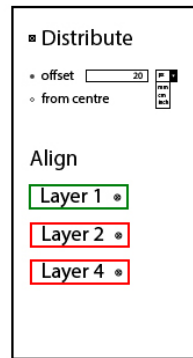
The align tool is a Toolbox Tool because it is convenient, easy to find, and allows users to interact with the canvas. The toolbox tool also allows users to connect with other functions in GIMP, for example, the Layers panel.

When the align tool is selected in the Toolbox, the Layers dialog box immediately switches to have a dark grey background. This is to remind users that the Layers panel functions in accordance with the align tool as layers are being selected.

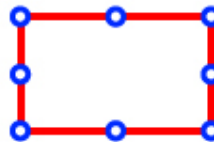
In the Layers dialog box, users select and deselect layers. A single-click selects a layer to be aligned/distributed and is highlighted with a red outline. A double-click selects the target layer and is highlighted with a green outline.



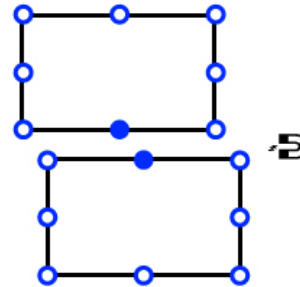
The align tool option box has a distribute option at the top. Once clicked, users can set an offset value and set a measurement from the drop down menu. When the distribution box is checked, but no offset value is set, the distance between objects is determined automatically.



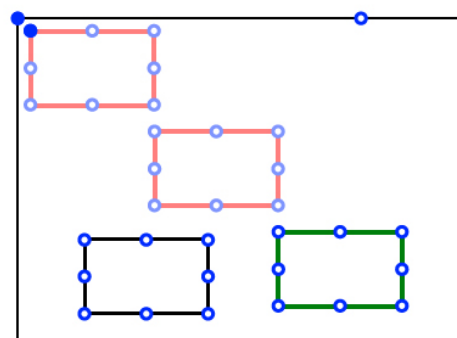
Each layer has invisible points in these locations: center, top left, top center, top right, bottom left, bottom right, bottom center, left and right.



Users can align by clicking and dragging one object to another object. Points on the edges of each layer act as magnets and allow the object to snap to that point when the mouse is released. These points are unfilled circles when they are not in use; once the points are selected, they become filled circles. When dragging to a target the circles become filled as one hovers near a point.



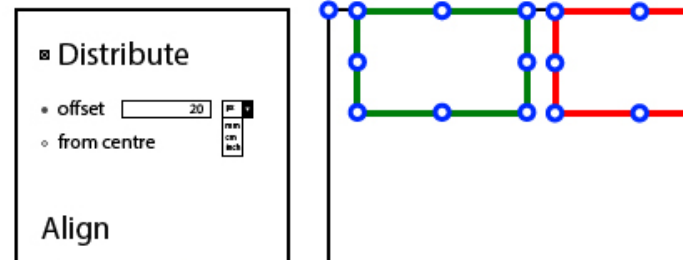
Once object(s) are selected for distribution, users select a point on the target to distribute from. As the mouse is held down, users can drag in any direction. As this happens, the selected objects appear in lighter opacity in order to give a preview of users' actions.



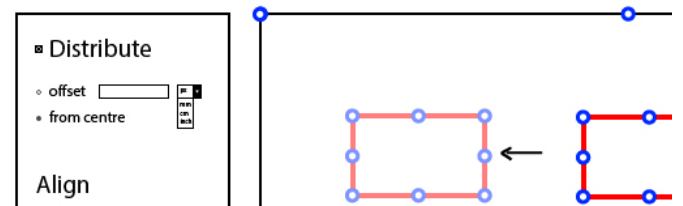


To align with a custom offset, users set their own value in the align tool option box. Once the distribution box is checked, users can fill in the offset value. Using the drop down menu beside it, users can select a measurement value (cm, mm, inches, or pixels).

If users would like to offset a distance from the canvas, a guide appears the offset distance from the edge of the canvas.



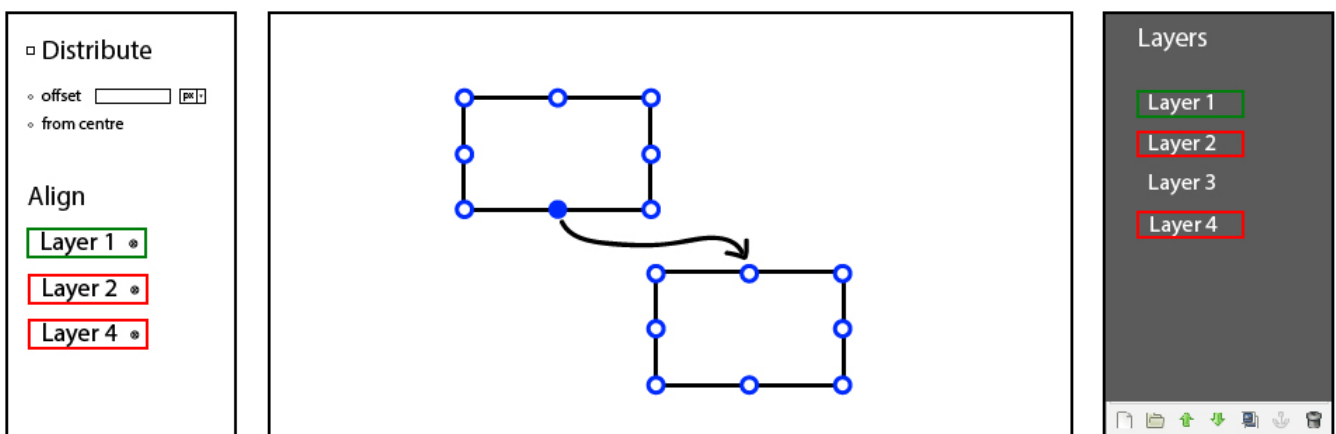
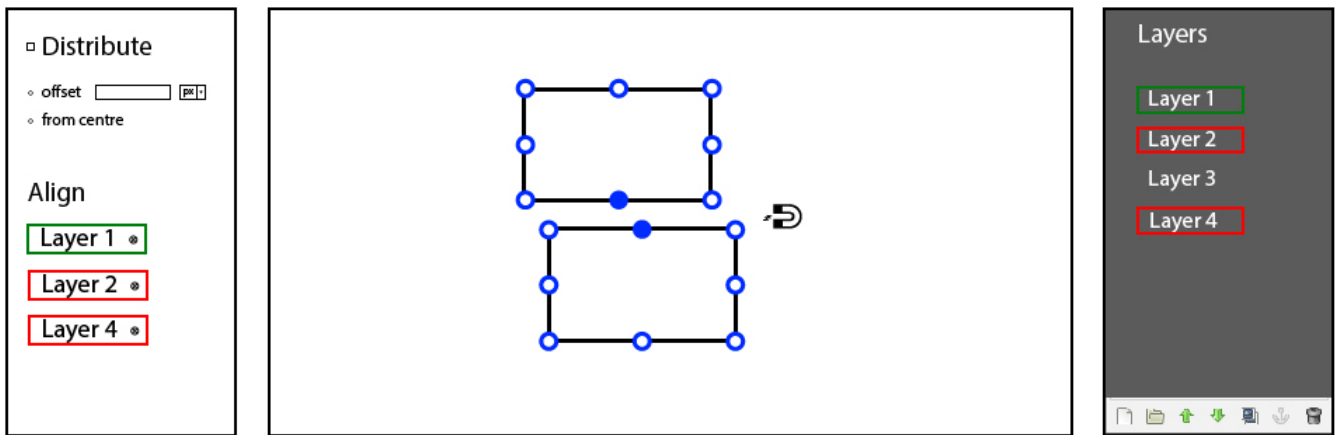
Users can check the „From Center“ box for distributing objects from a center point. When users have a stack of objects, they can select the objects and then select the center point and drag outwards in any direction. The Shift key can also be held down to constrain to the axes.



## scenario one

align two objects with each other

Each layer has fixed points on each corner, the middle of each edge, and the very center of the layer. When one hovers near a layer, these points appear as unfilled circles. Once a point is selected, it changes to a filled circle. Users can click any of these points and drag the layer to a location, where it will snap into place with any of the points on another layer. As the dragged layer gets close to a point on another layer, the point changes to a filled circle so users know where their layer will drop. This action occurs like a magnet as the layer snaps into place. Alignment along the vertical and horizontal axes can be controlled by holding down the Shift key and the layer will automatically snap to align with other layers as it is dragged. Users can also get more specific by holding Control; this voids the 'snap' function and allows users to grab a layer from anywhere along its edges.

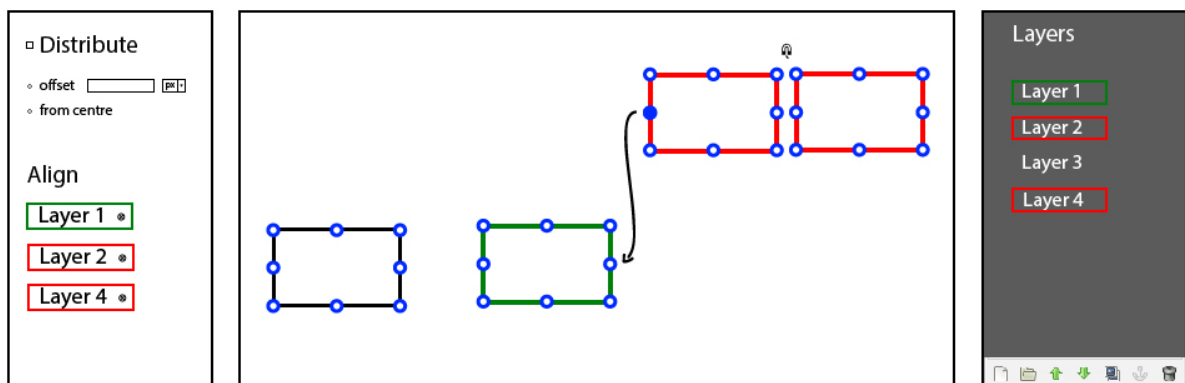
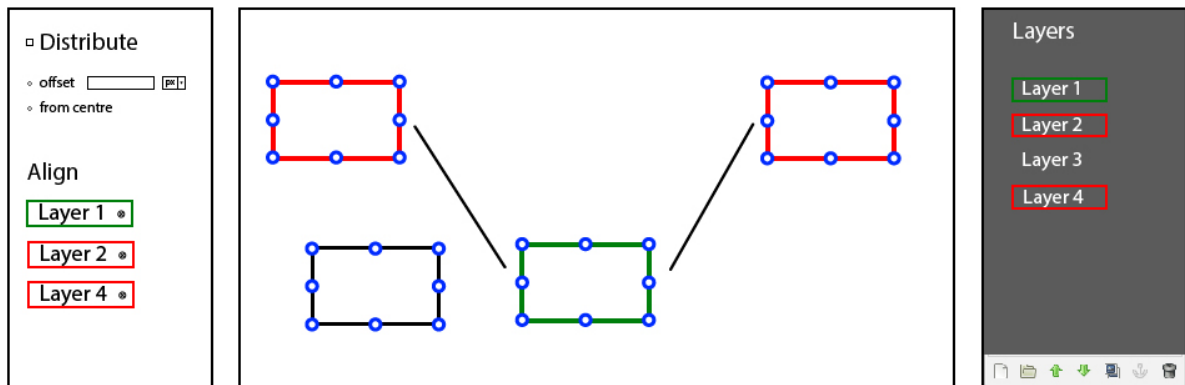


## scenario two

keeping things together

The align tool is also able to align two or more objects, paths, layers, and selections with a target, which can also be an object, path, layer, or selection. To select the target you just doubleclick on the layer and it highlights green. Green always indicates the layer in which the other layers will align to. Red always indicates the layer(s) that are being aligned or distributed. It is also possible for users to single- or double-click on the name of the layer in the Layers dialog box, where it also highlights with a green or red frame. To select the objects you want to align to the target you either click on the objects on the canvas or in the layer edit list. The main object as well as the following objects will turn up again in the align tool options frame. There you can delete them or change the order of distribution by dragging them.

The layers are then aligned in the same fashion that a single layer is aligned. One clicks a point on a layer and each layer is dragged to the desired location. Again, the same rules apply with holding down the Shift or Control key for constraint or control over the alignment..

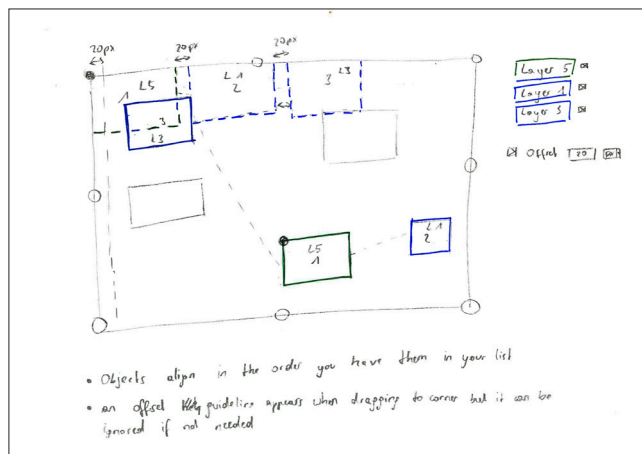


### scenario three

real distribution

With this align tool, many more options are available for users to distribute layers. To activate distribution, click on the box next to the title "Distribution." Then options appear for an offset value and measurement. Measurement choices include centimeters, millimeters, inches, and pixels. First, users select multiple layers in the order that they want them to be distributed. Also, a point on one of the layers should be selected for the alignment. Then users can double-click and drag from a point on the target layer. One has the ability to drag from that point in any direction (with the option of constraint with Shift) and any distance. If users refrain from putting any value in the offset box, the tool automatically organizes the layers equally. As users are holding down the mouse and dragging, each layer appears with light opacity where they would drop.

Users also have the option to distribute from the center of a layer outwards in both directions. This can be achieved by selecting the center point of a stack of layers and dragging in any direction. An even number of layers are automatically distributed and an odd number can be moved to either side.



## Distribution with automatic offset

**Distribute**

- offset
- from centre

**Align**

- Layer 1
- Layer 2
- Layer 4

**Layers**

- Layer 1
- Layer 2
- Layer 3
- Layer 4

**Distribute**

- offset
- from centre

**Align**

- Layer 1
- Layer 2
- Layer 4

**Layers**

- Layer 1
- Layer 2
- Layer 3
- Layer 4

## Distribution with custom offset

**Distribute**

- offset
- from centre

**Align**

- Layer 1
- Layer 2
- Layer 4

**Layers**

- Layer 1
- Layer 2
- Layer 3
- Layer 4

## Distribution from center-point

**Distribute**

- offset
- from centre

**Align**

- Layer 1
- Layer 2
- Layer 4

**Layers**

- Layer 1
- Layer 2
- Layer 3
- Layer 4